

SEP 12 1991

Department of Water and Power the City of Los Angeles



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September 11, 1991

Mr. S. Gale Chapman
President and Chief Operations Officer
Intermountain Power Service Corporation
850 West Brush Wellman Road
Delta, Utah 84624-9546

Dear Mr. Chapman:

Additions and Betterments
IPSC Project File No. IGS No. 91-3
Burner Modifications and Replacements on
Units 1 and 2
Intermountain Generating Station (IGS)

As a result of our meeting on IGS boiler burners on August 8, 1991, enclosed are the minutes, revised with input from IPSC and the Department's Mechanical Engineering Section (MES), for that meeting which contain highlights and action task plans. Please proceed to do your tasks related to arranging for installation of stabilizers and shrouding for the burners of Units 1 and 2. This work should be coordinated with MES who have the lead for this team project for burner modifications. The action tasks for IPSC are as follows:

1. Arrange for Finite Element Analysis with RJM. Advise MES of status for overall schedule preparation and coordination of the activities they are responsible for.
2. Send results and recommendation of Finite Element Analysis to MES for review and to the Generation - External Major Section (GEMS) for approval.
3. Arrange for design, procurement, and installation of the stabilizers and shrouding for the Unit 2 fall scheduled outage beginning on October 28, 1991. Also, arrange for air-balancing of the burners. Coordinate the scheduling with MES.

DKK [Signature]
BP
SLS
JLY
GKH cc'd on hr.
MDR
FILE

REFER
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JDH _____
DKK *9/17/91 cc'd on hr. MR*
NAM _____
NHC _____
FILE _____

Water and Power Conservation ... a way of life

File: 01.01.03
16591-3

4. Arrange for design, procurement, and installation of the stabilizers and shrouding for the Unit 1 spring scheduled outage beginning on April 13, 1992. This task is dependent on the successful operation of the stabilizers on Unit 2.
5. Establish the appropriate IPSC Work Orders to accumulate the costs described above related to IGS No. 91-3. Include the reestimated costs for this project in the multiyear project summary submitted in conjunction with the 1992-93 Capital Budget.

Mr. S. Gale

Project

Improvement

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The action tasks for MES are as follows:

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1. Continue the lead on this project which includes providing updated schedules, presenting cost estimates to GEMS, implementing modifications, coordinating with IPSC for those tasks IPSC is doing.
2. Review results of Finite Element Analysis arranged for by IPSC and provide recommendations to GEMS for approval to proceed.
3. As part of the team, MES will witness installation of the 48 stabilizers and shrouds on Unit 2 during the scheduled outage beginning on October 28, 1991. IPSC will arrange for the design, procurement, and installation of the stabilizers and shrouds. IPSC will also arrange for the air-balancing of the burners.
4. Perform the necessary steps to obtain 48 modified burners and install same on Unit 1 during the spring scheduled outage beginning on April 13, 1992.
5. Coordinate installation of 48 stabilizers and shrouds with the installation of the burners on Unit 1 during the scheduled outage beginning on April 13, 1992. This task is dependent on the successful operation of the stabilizers on Unit 2.
6. Investigate and, if promising, prepare a scope and cost estimate to monitor and control airflow to individual windboxes.
7. Provide an updated burner improvement program proposal to coincide with the above tasks.

The above task information should be used as a basis. Any other tasks necessary for completing the overall job should be added as necessary.

The funds presently identified in the budget are \$1.819 million for fiscal year 1991-92 and \$1.837 million for fiscal year 1992-93. Please provide us with cost estimates and schedules so we can update both.

If you have any questions, please contact me or Mr. Charles L. DeVore at (213) 482-7247 or have your staff contact Mr. D. Neil Boothe at (213) 481-4190 regarding budget and accounting issues and Mr. Byron H. Fujikawa at (213) 481-8740 regarding the job.

Sincerely,

Bruce E. Blouey

BRUCE E. BLOWEY
Engineer of Generation - External

Enclosure

- c: Messrs. Dennis K. Killian, IPSC
- Gerald K. Hintze, IPSC
- Charles L. DeVore
- D. Neil Boothe
- Byron H. Fujikawa

...with the installation of the burners on Unit 1 during the period of the ... operation of the stabilizers on Unit 1.

September 11, 1991

MEMORANDUM

FROM B.-H. Fujikawa **TO** C. L. DeVore **DATE** August 8, 1991

SUBJECT Minutes of Boiler Burner Meeting on 8-8-91

The funds presently identified for the fiscal year 1992-93. Please provide us with cost estimates and schedules for the proposed work.

Attendees:

Chuck DeVore	Gale Chapman
Jim Allen	Dennis Killian
Larry Jones	Gerald Hintze
Byron Fujikawa	Jim Nelson
Irwin Stein	Aaron Nissen
Ron Nelson	Joe Hamblin
Doug Fowler	Joe Duwel
Raffi Krikorian	Bruce Blowey (part time)

Plans:

1. MES will continue in direction of having 48 burners installed on Unit 1 during the spring outage beginning on April 13, 1991.
2. IPSC will arrange a meeting with RJM in four weeks to answer questions from LADWP and IPSC regarding finite element analysis.
3. IPSC will ask RJM to do a finite element analysis on the present burners and operating conditions to see if their prediction indicates that the burners would have failed like they have. This run would validate the method with actual results.
4. IPSC will arrange for obtaining and installing stabilizers and shrouding for 48 burners on Unit 2 during the 4-week fall outage beginning on October 28, 1991. They will also arrange for air balancing. This is to see if the stabilizers will work as claimed by RJM.
5. IPSC will arrange for obtaining and installing stabilizers and shrouding for 48 burners on Unit 1 during the 4-week spring outage beginning on April 13, 1991 only if the stabilizers operate successfully on Unit 2. This will be coordinated with the installation of the modified burners being arranged for by MES.
6. MES will investigate and, if promising, prepare a scope and cost estimate to monitor and control air flow to individual windboxes.

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7. Need to address what other tasks need doing during or after the above tasks. Need to lay out a schedule or alternative schedules to do all tasks. Need to verify that everyone can meet the windows in the schedule. Need cost estimates.

Highlights of Meeting

1. RJM given B&W modified burner design information.
2. On the present schedule, we can probably install 48 burners in the spring on Unit 1, but without the desired well thought out technical approach.
3. There are two problems associated with air. Out of service burners are not getting enough cooling air. In service burners do not have a stable flame. This may be an air flow distribution problem.
4. Can we continue for a couple of years and maintain the IGS Units until we can get a good fix? IPSC (Gale) says no for Unit 1, but yes for Unit 2.
5. RJM is seen to have a lot of experience for oil and gas burners, but is new to coal burners. There is a different swirl factor for oil, gas, and coal. Oil and gas burner units have their highest efficiency around a swirl factor of 0.6.
6. IPSC handed out their version of a schedule for handling the burner modification. MES met with GEMS earlier and presented their version. MES version copies were faxed to IPSC prior to this meeting.
7. IPSC is concerned with safety on Unit 1. They want replacement burners in the spring of 1992 no matter what we want to do in the way of R&D. According to IPSC all 48 burners on Unit 1 need to be replaced. There are holes in various parts due to high temperature. See pictures and outage book for Units 1 and 2.
8. IPSC wants to replace all 48 burners on Unit 1 during the spring outage on Unit 1. Add stabilizers also, if they prove out on Unit 2. Worst case would be to shutdown and pull the stabilizers. (Gale can live with this)
9. Put stabilizers on Unit 2 during the fall, 1991 outage. Balance air, use SS 310 material for stabilizers, and put on shrouds.

10. Need to have RJM answer some questions. A meeting was mentioned. Ron Nelson said he would like to attend.
11. For the burner material only, the cost is about \$1.2 million for 310 SS and \$1.8 million for 800H.
12. Could the finite element analysis method have predicted that the presently designed burners would have failed?
13. Do burner and stabilizer. Design, fabricate, and install on Unit 1 in the spring of 1992.
14. Raffi would like to try 1 burner with new material and design in November on Unit 2.
15. Raffi says B&W has not committed to 48 burners for spring, 1992.
16. Some of the costs: \$350k to RJM
For the stabilizers: \$90k.
For the 3 D modelling: \$80k.
For the air flow balancing: \$45-50k.

BHF